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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/765,342 | 01/27/2004 | William T. Quinlin | 7058 | 1063 |

29394 7590 09/19/2005

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BARBERTON, OH 44203-0271

EXAMINER

LEE, SUSANNAH E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1626

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,342

Applicant(s)

QUINLIN ET AL.

Examiner

Susannah Lee

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/27/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim 1 is pending in the instant application.

Information Disclosure Statement

The information disclosure statement (IDS), filed on 01/27/2004 has been considered.

Please refer to Applicant's copy of the 1449 submitted herewith.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goe et al., U.S. Pat. No. 5,099,028.

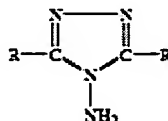
Applicants instant elected invention teaches a process for synthesizing 4-amino 4H-1,2,4-triazole, comprising the steps: (a) reacting ethyl formate with a solution of hydrazine hydrate solution, ethanol, and sulfonated cross-linked polystyrene ion exchange resin in a condenser; (b) maintaining the mixture at a temperature of 75 degrees Celsius until no more liquid exists the

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condenser; (c) heating the solution to a temperature of approximately 130 to 133 degrees Celsius; (d) maintaining the solution at the temperature of step c for a sufficient time to remove ethanol and water and complete the synthesis of the 4-amino 4H-1,2,4-triazol; (e) cooling the solution to 60 degrees Celsius; (f) filtering the solution to remove the ion exchange resin; and (g) cooling the filtered liquid to ambient temperature (see page 7, claim1).

Determination of the scope and content of the prior art (MPEP § 2141.01)

Goe et al. (U.S. Pat. No. 5,099,028) teaches a process for preparing a 4-amino-1,2,4-



4(H)triazole derivative composition having the formula , which includes the step of reacting hydrazine or an aqueous hydrazine solution with a carboxylic acid having the formula RCO_2H , the improvement which comprises conducting said reaction in the presence of an insoluble polymer containing acidic functional groups sufficiently strong to and which cause the reacting step to proceed (see column 8, claim 1) and comprising the additional step of recovering the polymer by filtration means (see column 8, claim 8) and where the reaction is carried out at a temperature range from about 105°C to 180°C (see column 8, claim 10) or a temperature range from about 110°C to about 150°C (see column 8, claim 11).

Ascertainment of the difference between the prior art and the claims (MPEP § 2141.02)

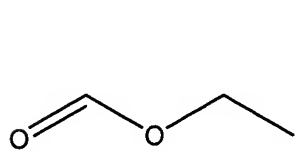
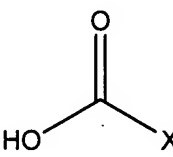
The difference between the prior art of Goe and the claims is that in the instant process ethyl formate, a carboxylic acid analogue (i.e. an ester), is used while in the prior art a carboxylic acid is used.

Finding of prima facie obviousness – rationale and motivation (MPEP § 2142-2413)

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One skilled in the art would have found the claimed process prima facie obvious because the instantly claimed process and the processes of Goe have the same critical steps. The motivation to make the claimed process derives from the expectation that processes that contain the same critical steps will yield similar products in similar yields. In essence, the instantly claimed process and the process of Goe comprise the same critical steps (1) reacting a carboxylic acid or a carboxylic acid analogue (i.e. ethyl formate), hydrazine, and a polymer (i.e. sulfonated cross-linked polystyrene ion exchange resin), (2) heating the mixture to approximately 130 to 133 degrees Celsius, (3) removing the ethanol and water to complete the synthesis of the 4-amino 4H-1,2,4-triazol, (4) cooling the solution and filtering the solution to remove the polymer.

It is well known in the art that analogues are prima facie obvious and that discovery of an optimum value of a result effective variable is not patentable if such discovery is within one skilled in the art. A prima facie case of obviousness may be rebutted in optimizing a variable only when results are unexpectedly good. In re Boesch, 205 USPQ 215. In addition, the selection of reaction conditions is more optimization by more modification of routine experimentation and within one skilled in the art. Changes in temperature, concentration, or both is not patentable modification in the absence of unexpected results which is different in kind and not degree. In re Aller, 105 USPQ 233. Therefore, the substitution of ethyl formate,

, for a carboxylic acid, , is prima facie obvious. Applicant may rebut this by providing evidence that optimizing this variable produces unexpectedly good results.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susannah Lee whose telephone number is (571) 272-6098. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is (571) 272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**KAMAL A. SAEED, PH.D.
PRIMARY EXAMINER**

Kamal Saeed

Susannah Lee, AU 1626
Date: 09/15/05